

ARRL

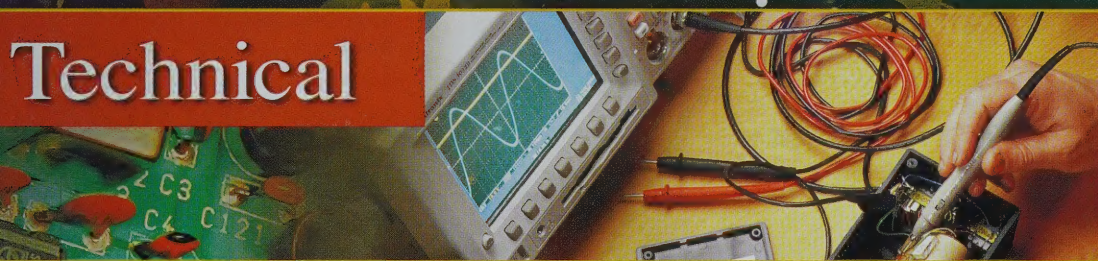
Publications

FALL / WINTER 2004

Antennas



Technical



NEW PRODUCTS

Page 1

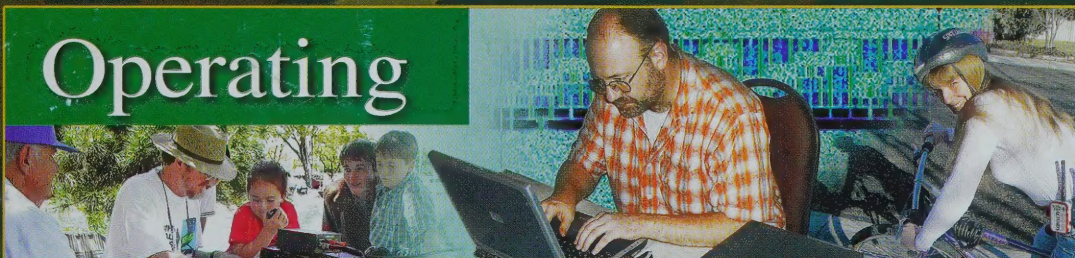
QUICK ORDER

toll-free 1-888-277-5289

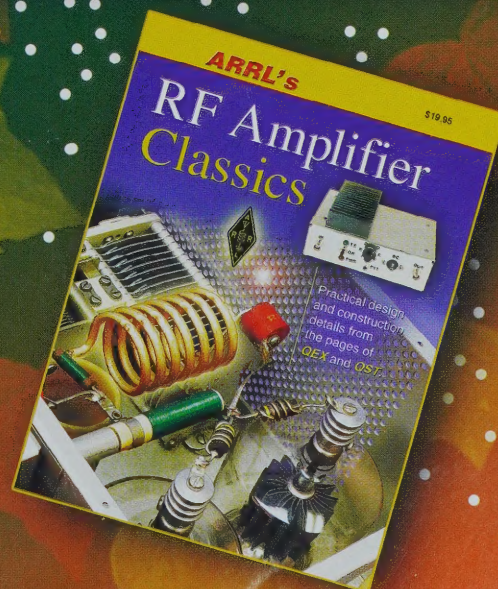
www.arrl.org/shop

or call for a dealer near you!

Operating



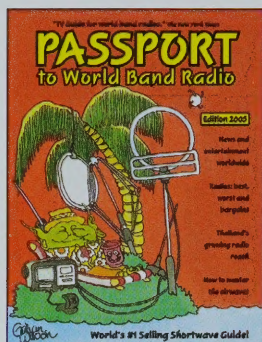
**GREAT
GIFT IDEAS!**



Station Resources

Useful products for **EVERY SHACK**

NEW!



Passport to World Band Radio—2005 edition

With **Passport** as your guide, you have the world at your fingertips.

#9446 \$22.95



Buckmaster's HamCall™ CD-ROM

Over 1,750,000 worldwide call sign listings.

#8991 \$49.95



NEW!

Radio Amateur Callbook CD-ROM

Feature-packed! More than 1,650,000 licensed radio amateurs.

#9487 \$49.95

Radiograms For Traffic Handlers:

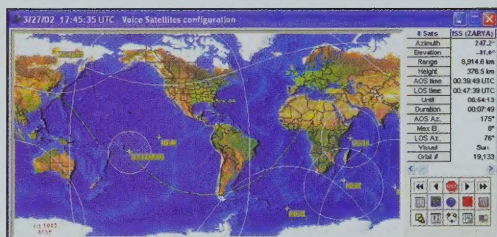
Message Delivery Cards

(package of 20),

#1310 \$2

Message Pad with 70 sheets,

#1320 \$2



Nova for Windows

An innovative, real-time satellite tracking program.

#8724 \$59.95



Log Book

spiral bound (8.5 x 11"),

#1250 \$5

MINILOG

wire-bound (6.25 x 4"),

#7539 \$4.95

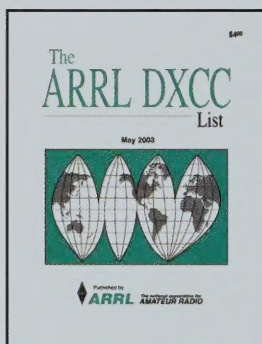
Log Sheets

#1265 \$4

The ARRL DXCC List

The official source of DXCC awards information.

May 2003 edition, #8942 \$4



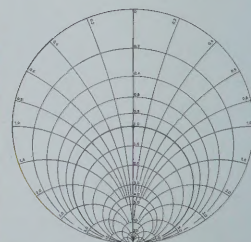
Antenna and Transmission Line Design Aids:

Standard Smith Charts (package of 5 sheets), #1340 \$2

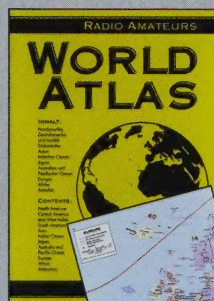
Expanded Smith Charts (package of 5 sheets), #1350 \$2

Smith Charts—50-ohm center (pkg of 5 sheets), #1341 \$2

Antenna Pattern Worksheets, 100 8.5"x11" sheets, #1360 \$3



MAPS



The Radio Amateurs World Atlas

Booklet of full-color maps, call-sign prefixes and more.

#5226 \$12.95

ARRL World Grid Locator Atlas

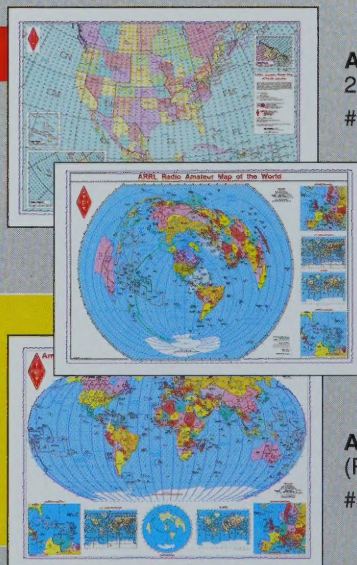
#2944 \$5

Grid Locator (US Grid Squares)

#1290 \$1

Polar Map (for OSCAR)

#1300 \$1



ARRL Map of North America

27 x 39 inches.

#8977 \$15

ARRL Map of the World (Azimuthal)

27 x 39 inches.

#7717 \$15

ARRL Map of the World (Robinson)

26 x 34.5 inches.

#8804 \$15

NAME

ADDRESS

CITY

STATE

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ARRL

225 MAIN STR
NEWINGTON,
USA

What's New

BIGGEST UPDATE IN 10 YEARS

The ARRL Handbook for Radio Communications—2005

Completely updated. More projects. And, now including

The ARRL Handbook CD with every book!

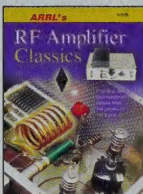
See page 4.



ARRL's RF Amplifier Classics

Turn dreams of constructing your first amp or next brick into reality!

See page 5.

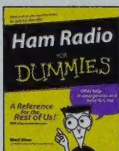


Great Gift Idea!

Ham Radio for Dummies

Discover ham radio "The Dummies Way!"

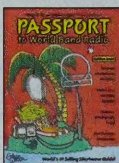
See page 3.



Passport to World Band Radio—2005

A channel-by-channel guide to shortwave listening.

See inside front cover.



Radio Amateur Callbook CD-ROM and

Buckmaster's HamCall™ CD-ROM

Get the most up-to-date worldwide call sign data.

See inside front cover.



Great Gift Idea!

SPECIAL FEATURE!

The Secret Wireless War

The Story of MI6 Communications—1939-1945

#9437 \$54.95

"There never was, in the whole history of wireless, a bigger role for the amateur wireless enthusiast."
—author Geoffrey Pidgeon

Probably the most complete book yet written on Britain's secret radio communications during WWII, with details of places and events that have never before been reported. An extraordinary story that includes hams among those patriots that undoubtedly helped the allied war effort.

Hardback. 416 pages including pictures of secret agent's wireless sets!

Published by UPSO Limited (UK). ARRL is the exclusive US distributor.



NEW from RSGB!

International Antenna Collection—Volume 2

See page 7.

LF Today

The latest for LOWfers (low-frequency experimenters)!

See page 13.

Also New:

New Online Course!

Radio Frequency Propagation

See page 15.

Practical Digital Signal Processing

See page 10.

VHF Propagation

See page 11.

Build Your Own Low-Power Transmitters

See page 11.

Proceedings:

38th Central States VHF Conference—2004

23rd ARRL and TAPR Digital Communications Conference—2004

22nd AMSAT Space Symposium and Annual Meeting—2004

Microwave Update 2004

See page 6.

CONTENTS:

Station Resources Inside Front Cover

New Products Page 1

Operating Pages 2-3

Technical Pages 4-6

Antennas Pages 7-9

ARRL Marketplace Pages 10-11

RSGB Products Pages 12-13

CD-ROM Collections Page 14

Continuing Education Page 15

Licensing Page 16

Operating



The ARRL Operating Manual

8th Edition

#9132 \$25

The most complete book about Amateur Radio operating:

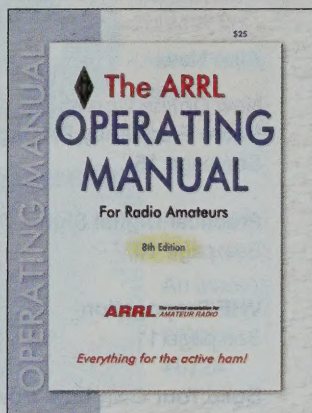
Rules and Regulations—updated and including 60 meters;

FM operating—including repeaters, EchoLink and IRLP;

VHF and HF digital—with new emphasis on sound-card based operating modes and APRS;

Other VHF/UHF modes—including meteor scatter and weak signal software applications; **DXing, Contesting and Award Hunting**—and featuring ARRL's *Logbook of The World*;

Emergency communications—updated for the post-September 11, 2001 environment; **Traffic Handling**; **Image Communications**—including innovations using sound cards; **Satellites**...and many additional **References**.



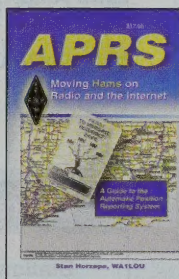
APRS—Moving Hams on Radio and the Internet

by Stan Horzepa, WA1LOU

#9167 \$17.95

A guide to the Automatic Position Reporting System. Track moving objects on maps, display weather statistics and storm warnings, find hidden transmitters or jammers and more. Learn how to setup and operate your APRS station with little more than a VHF radio and computer.

APRS is a registered trademark of APRS Engineering LLC, which reserves all rights to its use for commercial products.

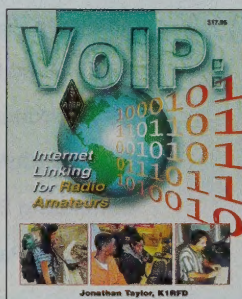


VoIP: Internet Linking for Radio Amateurs

by Jonathan Taylor, K1RFD

#9264 \$17.95

Find out how radio amateurs are using the Internet as the relay between their base stations, handhelds and mobile transceivers. This is a guide to some of the popular VoIP (Voice Over Internet Protocol) systems used by hams: EchoLink, IRLP, eQSO and WIRES-II.

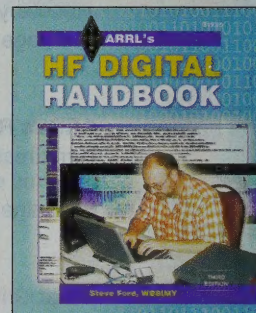


ARRL's HF Digital Handbook—Third Edition

by Steve Ford, WB8IMY

#9159 \$19.95

Assemble and operate your own HF digital station. Learn how to use many of the digital modes to talk to the world: PSK31, RTTY, PACTOR, Q15X25 and more!



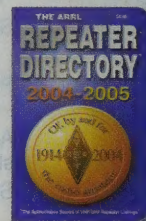
The ARRL Repeater Directory

2004-2005 Edition

#9191 \$9.95

The latest VHF/UHF frequency listings for repeaters across the US and Canada.

Also includes: **IRLP (Internet linked) nodes**; **Repeater Operating Practices**; **Frequency Coordinators**; tips for **handling interference**; **Using CTCSS tones** and **Digital Coded Squelch (DCS)**; **VHF/UHF Band Plans** and a **2-meter channel-spacing map**.



TravelPlus for Repeaters™ CD-ROM

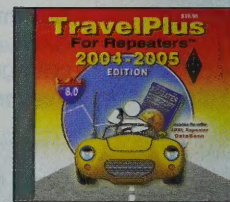
2004-2005 Edition

#9256 \$39.95

Access repeaters in ways you've never imagined. **TravelPlus** on CD-ROM is like having *The ARRL Repeater Directory* on your COMPUTER!

- Map your travel route and tune in. Supports GPS.
- Print maps and repeater lists.
- **MORE DATA!** Includes *The ARRL Repeater DataBase*, IRLP nodes, AM/FM radio, broadcast television, and NOAA weather stations.
- Export data. Transfer to *Palm™* or *Pocket PC*, radio programming software, and more.

Requires Microsoft Windows. Upgrade available for previous customers. Contact ARRL for details.



The ARRL FCC Rule Book

13th Edition

#9000 \$12.95



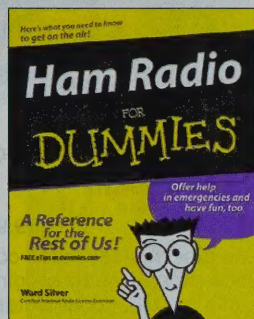
ARRL Publications

Ham Radio for Dummies

by Ward Silver, N0AX

#9392 \$21.99

Find out about ham radio and join the fun! Here's the scoop, including licensing requirements and how to set up a station. And if you're already licensed, this book will help you start sounding (and feeling) like a pro!



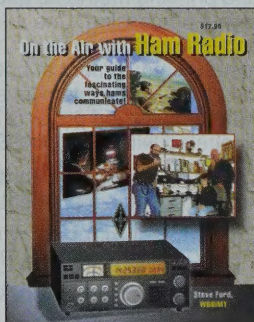
On the Air with Ham Radio

by Steve Ford, WB8IMY

#8276 \$17.95

Here are the resources and know-how you need to enjoy Amateur Radio.

Explore different bands. Setup a station. **Get On the Air with confidence!** Try out SSB, CW, video or one of the digital modes. Operate on a repeater, or check out HF, satellites, or PSK31. Pages of advice to help you get started in just about any ham radio activity.



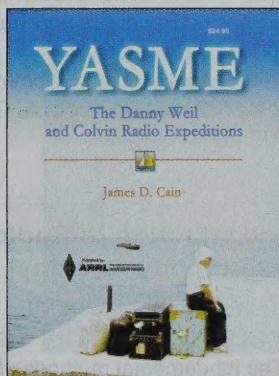
YASME

The Danny Weil and Colvin Radio Expeditions

by James D. Cain, K1TN

#8934 \$24.95

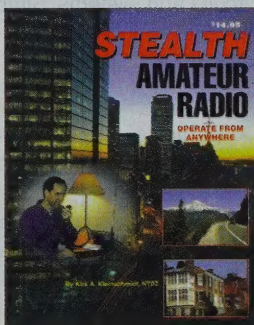
This is the history of three travelers spanning the birth of YASME—the boat that carried young sailor Danny Weil on his first voyages beginning in 1954—and the lives of famed ham radio DXpeditioners Lloyd and Iris Colvin.



Stealth Amateur Radio

#7571 \$14.95

Adventure into the world of hidden stations and invisible antennas. Set up and operate a station from just about anywhere!

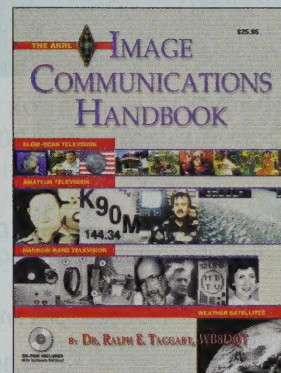


The ARRL Image Communications Handbook

by Dr. Ralph E. Taggart, WB8DQT

#8616 \$25.95

With home computers, widely available software, and gear many hams already own, it's easier than ever to enjoy the imaging modes: Narrow-Band Television (NBTv), Amateur Television (ATV), Slow-Scan Television (SSTV), and Weather Satellite Imaging (WEFAX). Book with CD-ROM.

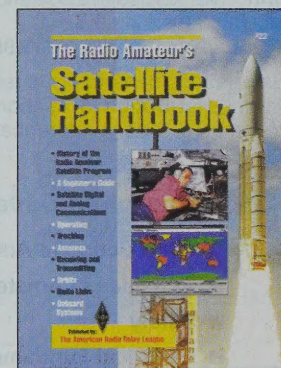


The Radio Amateur's Satellite Handbook

by Martin Davidoff, K2UBC

#6583 \$24.95

The most comprehensive book ever written about amateur satellites: operating, antennas, tracking software, satellite profiles, and more! Revised First edition, 4th printing, © 1998-2003



The ARRL Satellite Anthology

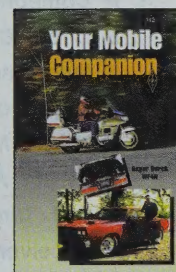
Fifth edition, © 1999

#7369 \$15

Weather Satellite Handbook

Fifth edition, second printing, 1996, © 1994-1996

#4483 \$20



Your Mobile Companion

by Roger Burch, WF4N

#5129 \$12

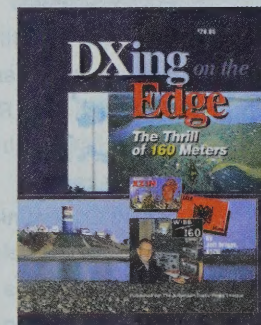
Whether your interest is in VHF or HF, whether you're looking for advice on choosing gear, installing it so it works right the first time or finding the right antenna, you'll find it here.

DXing on the Edge—The Thrill of 160 Meters

by Jeff Briggs, K1ZM

#6354 \$29.95

Chronicles the accomplishments of Topband pioneers—plus tips for successful 160-meter operating. Audio CD included.



Internet Orders: www.arrl.org/shop

Call our toll-free number, 1-888-277-5289, to order or to find a dealer near you!

Fall/Winter 2004 – Page 3

Technical

The ARRL Handbook for Radio Communications—2005 Eighty-Second Edition

Now including
The ARRL Handbook CD
—the fully searchable and complete
book on CD-ROM!

Hardcover. Includes book and
CD-ROM (version 9.0),
#9299 **\$54.95**

Softcover. Includes book and
CD-ROM (version 9.0),
#9280 **\$39.95**

Generations of hams have relied
on **The Handbook** for its thorough
coverage of theory, references and
practical projects.



NEW!



New—Complete Table of Contents

- Introduction to Amateur (Ham) Radio
- Activities in Amateur Radio
- Safety
- Electrical Fundamentals
- Electrical Signals and Components
- Real-World Component Characteristics
- Component Data and References
- Circuit Construction
- Modes and Modulation Sources
- Oscillators and Synthesizers
- Mixers, Modulators and Demodulators
- RF and AF Filters
- EMI / Direction Finding
- Receivers and Transmitters
- Transceivers, Transverters And Repeaters
- DSP and Software Radio Design
- Power Supplies
- RF Power Amplifiers
- Station Layout and Accessories
- Propagation of RF Signals
- Transmission Lines
- Antennas
- Space Communications
- Web, Wi-Fi, Wireless and PC Technology
- Test Procedures and Projects
- Troubleshooting and Repair

Experimental Methods in RF Design

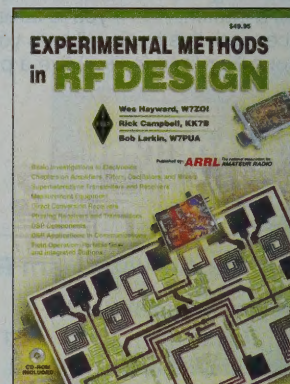
#8799 **\$49.95**

Immerse yourself in the communica-
tions experience by building
equipment that contributes to
understanding basic concepts and
circuits. Explore wide dynamic
range, low distortion radio equip-
ment, the use of direct conversion
and phasing methods, and digital
signal processing. Use the models
and discussion to design, build and
measure equipment at both the
circuit and the system level. Laced
with unpublished projects and
illustrated with CW and SSB gear.

CD-ROM included with design software, listings for DSP
firmware, and supplementary articles.

Contents:

- Basic Investigations in Electronics
- Chapters on Amplifiers, Filters, Oscillators, and Mixers
- Super-heterodyne Transmitters and Receivers
- Measurement Equipment
- Direct Conversion Receivers
- Phasing Receivers and Transmitters
- DSP Components
- DSP Applications in Communications
- Field Operation, Portable Gear and Integrated Stations



Introduction to Radio Frequency Design

by Wes Hayward, W7ZOI

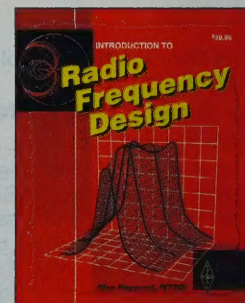
#4920 **\$39.95**

The fundamental methods of radio
frequency design using mathematics as needed to develop
intuition for RF
circuits and systems. Simple circuit models are used to prepare
you to actually design HF, VHF and UHF equipment.

First ARRL Edition, fourth printing
© 1994-2004.

Contents:

- Low Frequency Transistor Models
- Filter Basics
- Coupled Resonator Filters
- Transmission Lines
- Two-Port Networks
- Practical Amplifiers and Mixers
- Oscillators and Frequency Synthesizers
- The Receiver: an RF System



ARRL Publications

Digital Signal Processing Technology— Essentials of the Communications Revolution

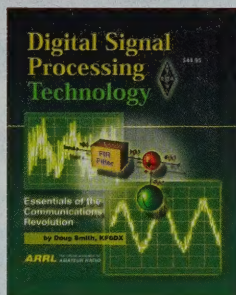
by Doug Smith, KF6DX

#8195 \$44.95

A comprehensive, readable work for anyone interested in Digital Signal Processing (DSP). The book begins with basic concepts, details digital sampling including fundamental and harmonic sampling, aliasing and mechanisms at play in real data converters, digital filter design, mathematics of modulation and demodulation, digital coding methods for speech and noise-reduction techniques, digital transceiver design, and other current topics. Sufficiently analytical for the advanced engineer or experimenter (with a working knowledge of algebra), while simultaneously affording an understandable picture of this exciting technology.

Contents:

- Introduction to DSP
- Digital Sampling
- Computer Representations of Data
- Digital Filtering
- Analytic Signals and Modulation
- Digital Coding Systems for Speech
- Direct Digital Synthesis
- Interference Reduction
- Digital Transceiver Architectures
- Hardware for Embedded DSP Systems
- DSP System Software
- Advanced Topics in DSP and more...



The ARRL UHF/Microwave Experimenter's Manual

#3126 \$20

Written for the growing number of radio amateurs who are discovering that there is life on our frequencies above 420 MHz. Technicians and engineers will find this book particularly useful. Information on design and fabrication techniques, propagation, antennas and feed lines, transmission media and much more. 448 pages.



The ARRL UHF/Microwave Projects CD

#8853 \$24.95

Practical projects, design and construction ideas. Assemble a high performance antenna or transverter without a room full of special test equipment and machine tools. Includes Volume 1 (1994) and Volume 2 (1997) of *The ARRL Microwave Projects Manuals*. Access a variety of tried and tested projects: transverters, preamplifiers, power amplifiers, antennas, test and measurement equipment, and more. CD-ROM requires Microsoft Windows 98 or later, or Macintosh.



ARRL's Vintage Radio

#9183 \$19.95

QST articles about the lure of vintage Amateur Radio gear: equipment, techniques, personal experiences, restoration, and classic QST ads. Includes "Old Radio" QST columns by John Dilks, K2TQN and other articles published between 1977 and 2003.

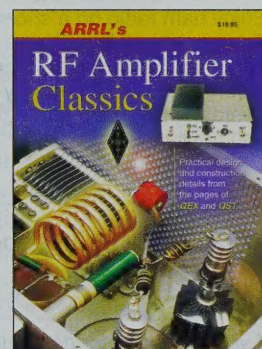


ARRL's RF Amplifier Classics

#9310 \$19.95

Two-dozen projects and articles to help shorten your discovery work. Find practical designs and construction details for classic tube and solid-state amplifiers at power levels from 5 W to 1.5 kW; amps for HF, MF, VHF and microwave. Build safe and reliable amplifiers. Produce loud and clean signals!

NEW!



Hints and Kinks for the Radio Amateur

16th Edition

#8926 \$15.95

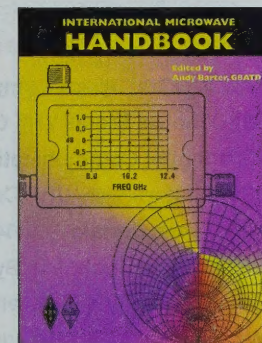
Hot tips, new modes and projects from the pages of QST: Equipment Tips and Mods; Batteries and Other Power Sources; Digital Modes; Troubleshooting; Restoration; Construction/Maintenance; Test Gear; Antenna Systems; Operating; Station Accessories; Interference (RFI/EMI). Plus more emphasis on computers and software, a newly updated list of suppliers, and feature articles from the popular QST column "The Doctor is IN."



International Microwave Handbook

#8739 \$39.95

Contents: operating techniques; system analysis and propagation; microwave antennas; transmission lines and components; microwave semiconductors and valves; construction techniques; common equipment; test equipment; bands 1.3 GHz, 2.3 GHz, 3.4 GHz, 5.6 GHz, 10 GHz, 24 GHz, and above.



Internet Orders: www.arrl.org/shop

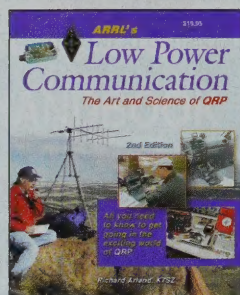
Technical

ARRL's Low Power Communication —2nd edition

The Art and Science of QRP by
Richard Arland, K7SZ

#9175 \$19.95

Enjoy ham radio on a shoestring budget. Explore kit building. Chase DX. Build antennas. Brush-up on propagation theory, and take a band-by-band operating tour. Low power, low cost—and big fun!

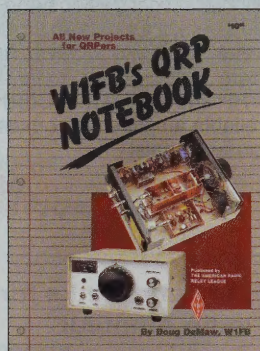


W1FB's QRP Notebook

by Doug DeMaw, W1FB

#3657 \$10

If you're looking for construction projects for QRP transmitters, receivers and accessories, look no further. Experience first-hand the thrill of making contacts using equipment that you built!

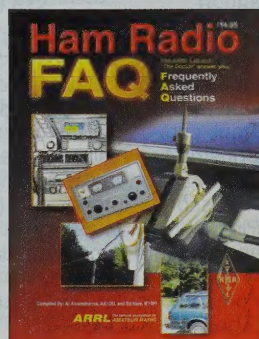


Ham Radio FAQ

The ARRL Lab and "The Doctor" answer your Frequently Asked Questions!

#8268 \$14.95

This book is a compilation of actual questions submitted to ARRL's Technical Information staff on: antennas; station setup and operation; mobile and portable operation; batteries and grounding; and more.



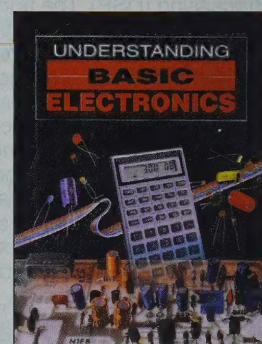
Conference Proceedings

AMSAT 22nd Space Symposium—2004 #9337	\$20
38th Central States VHF Conference—2004 #9302	\$20
23rd Digital Communications Conference—2004 #9329	\$20
30th Eastern VHF/UHF Conference—2004 #9221	\$20
Microwave Update—2004 #9345	\$20
SETI League Technical Symposium—2003 #8969	\$20
Southeastern VHF Society Conference—2004 #9248	\$20
Western States Weak Signal Conference—2002 #8748	\$20

Understanding Basic Electronics

#3983 \$20

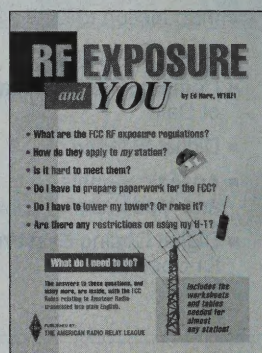
The foundations taught in this book will prepare you for more advanced concepts in electronics. The text is written in an easy-to-understand style that nontechnical readers will enjoy. You don't have to be an engineer or a math whiz to enjoy the thrill of experimenting with electronics circuits!



RF Exposure and You

#6621 \$22.95

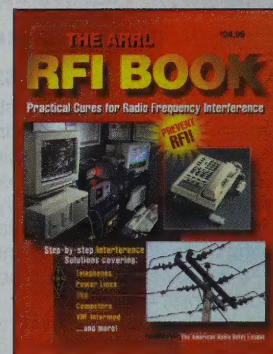
Meet the FCC RF exposure regulations! It's not complicated! Learn how to operate your station safely and legally using simple step-by-step ARRL worksheets and tables.



The ARRL RFI Book

#6834 \$24.95

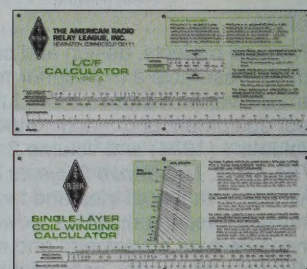
THE authoritative source for practical interference cures: automotive, television, computers, lamps, VCRs, stereos, intermod, telephones, and interference due to power lines. The latest RFI regulations, suppliers, and a complete bibliography have been included.



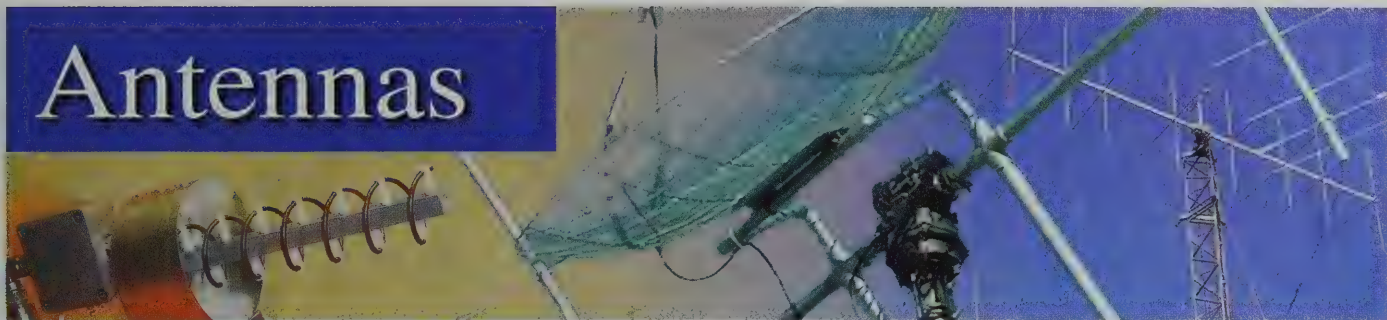
L/C/F and Single-Layer Coil Winding Calculator

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The ARRL Antenna Book is THE SOURCE for current antenna theory and a wealth of practical, how-to construction projects. Extensively revised, and featuring antenna designs enhanced by the latest advances in computer modeling. Design, build and install any imaginable type of antenna—from the most simple wire varieties, to specialized or highly optimized arrays.

Fully searchable CD-ROM included

Bundled with this edition is the fully-searchable book on CD-ROM and additional software utilities*. The CD-ROM supports Windows and Macintosh systems. At your command is the entire book—every word and every page—PLUS pages of band-by-band propagation tables for locations around the world! Uses the widely popular Adobe® Acrobat® Reader software (included) to view, navigate, search and print from all chapters.

The CD-ROM also includes three updated and improved programs (for Windows):

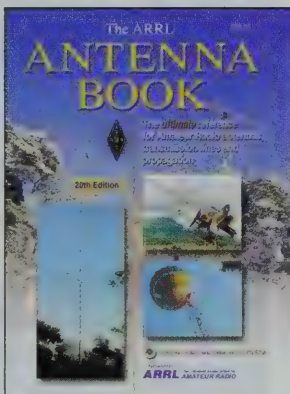
YW—Yagi for Windows

TLW—Transmission Line for Windows

HFTA—HF Terrain Assessment

EZNEC ARRL—Antenna Modeling by W7EL

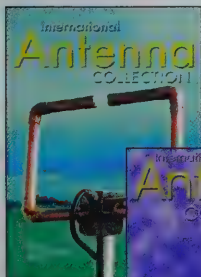
*CD-ROM System Requirements: Microsoft Windows 95 or later; or Apple Power Macintosh computer, Apple System Software version 7.1.2 or later. Additional software utilities are included, for Windows and DOS only.



Contents:

- Safety First
- Antenna Fundamentals
- The Effects of the Earth
- Antenna Modeling and System Planning
- Loop Antennas
- Low-Frequency Antennas
- Multiband Antennas
- Multielement Arrays
- Broadband Antennas
- Log Periodic Arrays
- HF Yagi Arrays
- Quad Arrays
- Long Wire and Traveling Wave Antennas
- Direction Finding Antennas
- Portable Antennas
- Mobile and Maritime Antennas
- Repeater Antenna Systems
- VHF and UHF Antenna Systems
- Antenna Systems for Space Communications
- Antenna Materials and Accessories
- Antenna Products Suppliers
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- Radio Wave Propagation
- Transmission Lines
- Coupling the Transmitter to the Line
- Coupling the Line to the Antenna
- Transmission-Line and Antenna Measurements
- Smith Chart Calculations

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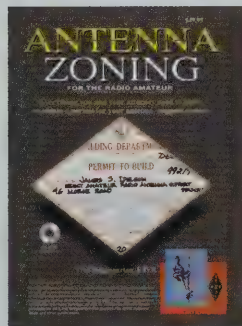
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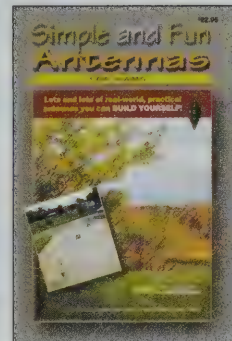
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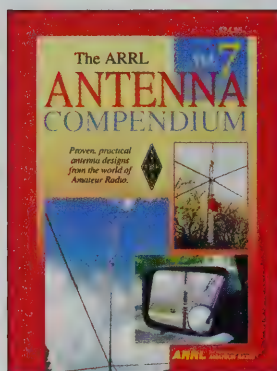
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Antennas

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- Propagation and Ground Effects
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- Tuners and Transmission Lines
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- VHF/UHF Antennas
- Wire Antennas
- Yagi Antennas

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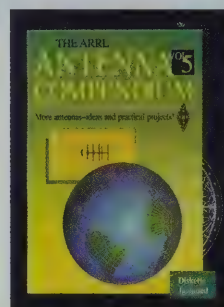
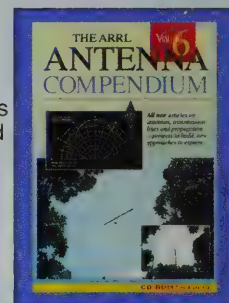
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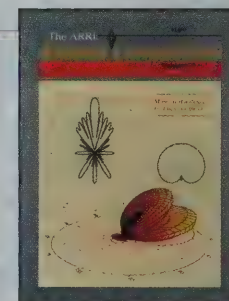


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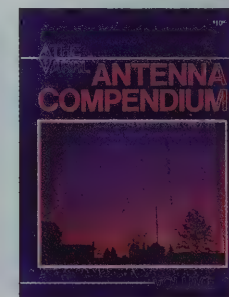
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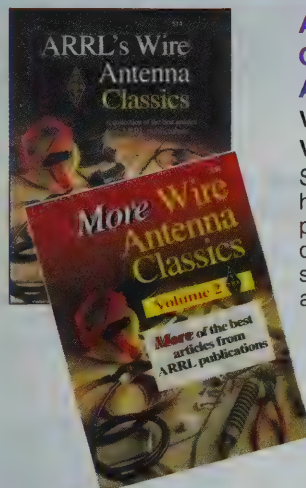
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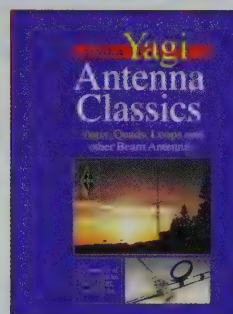


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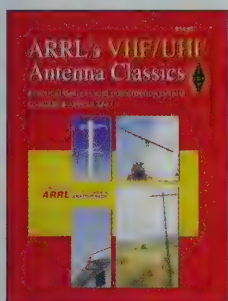


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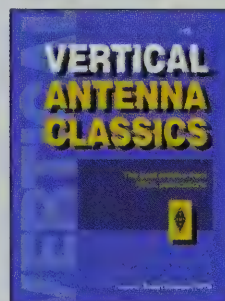


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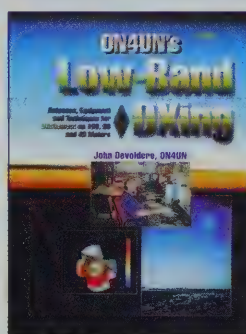


Physical Design of Yagi Antennas

by David Leeson, W6QHS

#3819 \$20

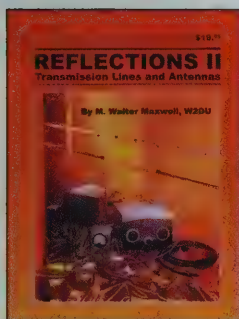
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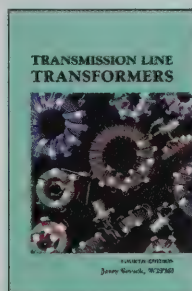


Reflections II—Transmission Lines and Antennas

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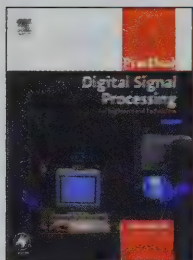
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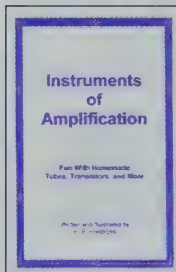
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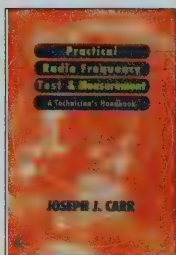
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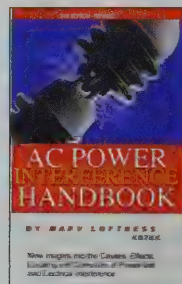
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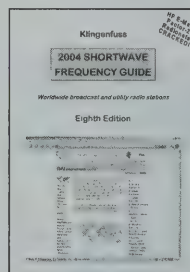


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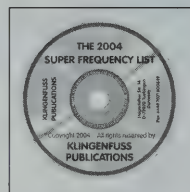
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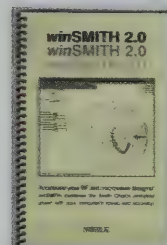
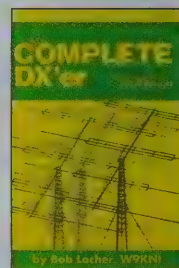
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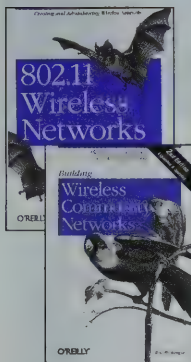
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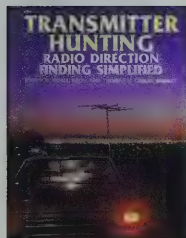
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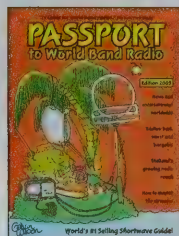
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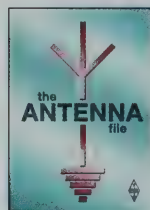
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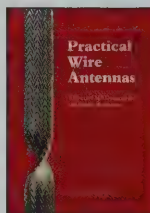
The best work from the last ten years of RSGB's *RadCom* magazine. 50 HF antennas, 14 VHF/UHF/SHF, 3 on receiving, 6 articles on masts and supports, 9 on tuning and measuring, 4 on antenna construction, 5 on design and theory. Beams, wire antennas, verticals, loops, mobile whips and more. 288 pages.



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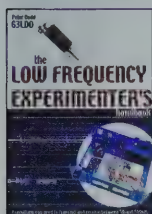


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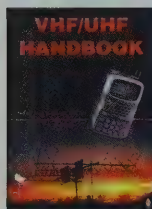
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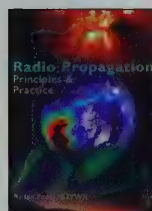
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Build it yourself! Low power transmitters, simple receivers, accessories, circuit and construction hints and antennas. Projects from the G-QRP Club's magazine *SPRAT*. 320 pages.



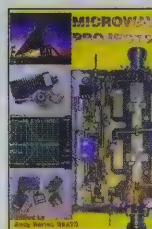
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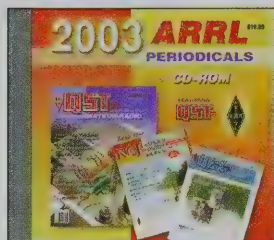
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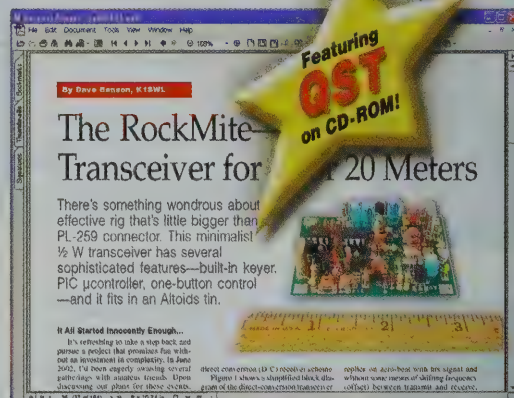
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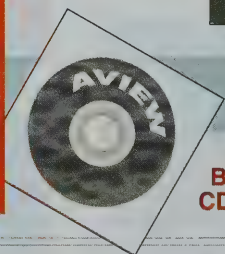


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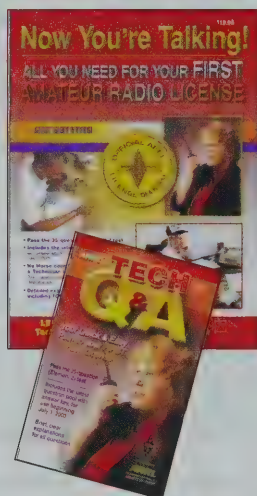
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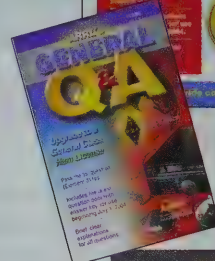
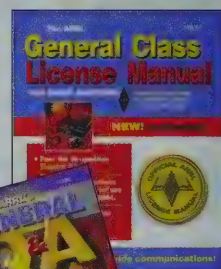
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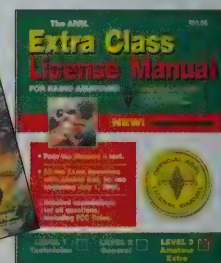
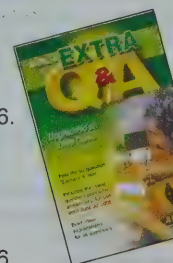
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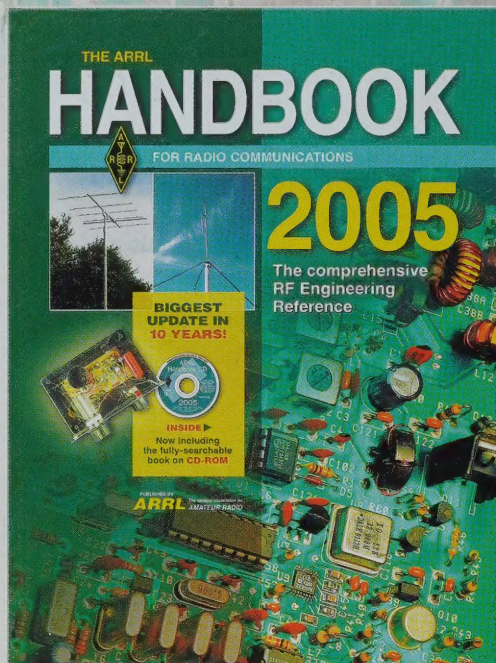
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